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Waldron et al.

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(54) **COLLAPSIBLE WHEELCHAIR**

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(52) **U.S. Cl.** **280/649**; 280/650; 280/657; 280/47.4; 297/16.2; 297/45
(58) **Field of Search** 280/647, 649, 280/650, 654, 657, 658, 47.25, 47.38, 47.4, 644; 297/16.2, 42, 45, 56

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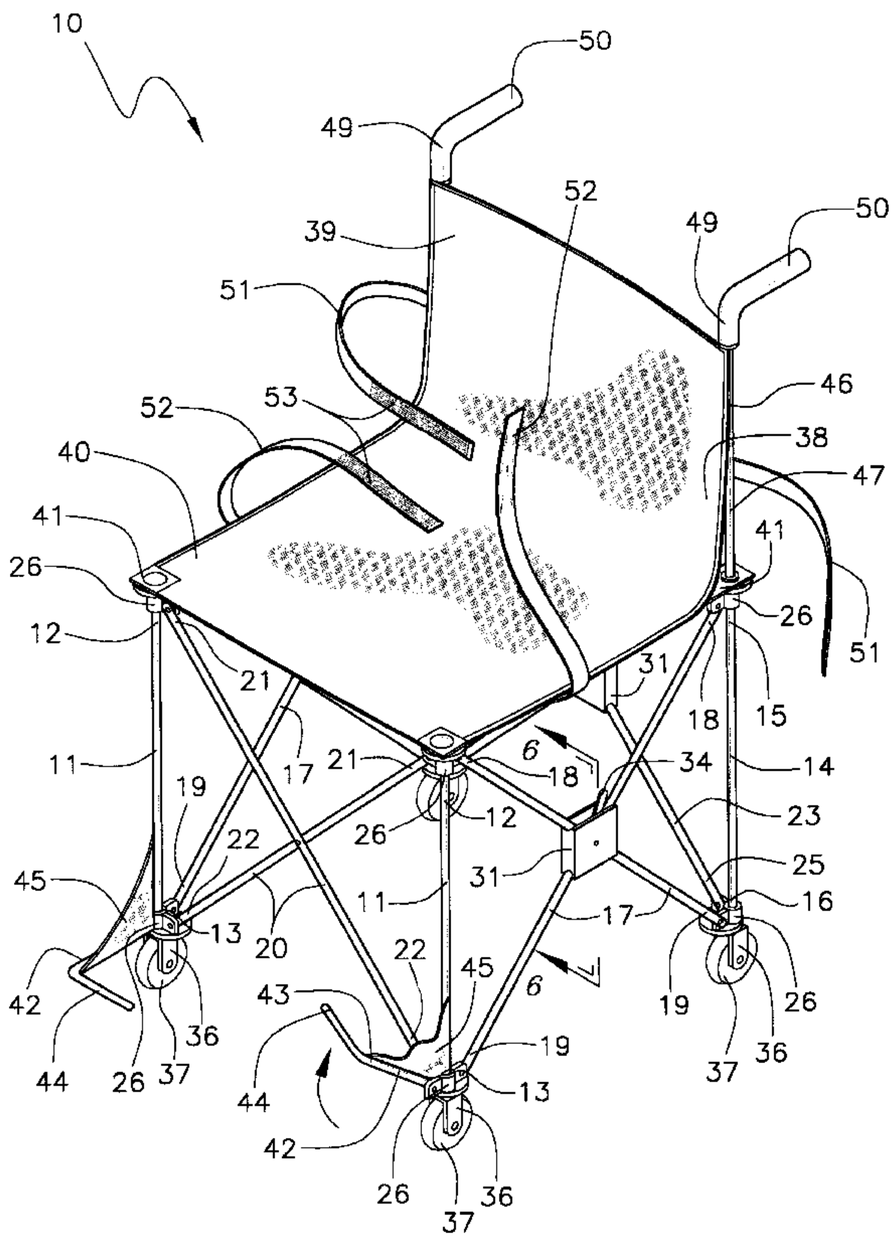
(57) **ABSTRACT**

A collapsible wheelchair for allowing a user to easily tote a wheelchair along on a public transportation such as an airplane and bus. The collapsible wheelchair includes a collapsible seat support assembly; wheel assemblies upon which the collapsible seat support assembly is mounted; brackets mounted to the collapsible seat support assembly; wheels rotatably mounted to the brackets; a seat member supported by the collapsible seat support assembly; footrest assemblies attached to the collapsible seat support assembly; handle members mounted to the collapsible seat support assembly; strap members attached to the seat member for securing a person upon the seat member; and a storage bag for storing the collapsible wheelchair.

6 Claims, 4 Drawing Sheets



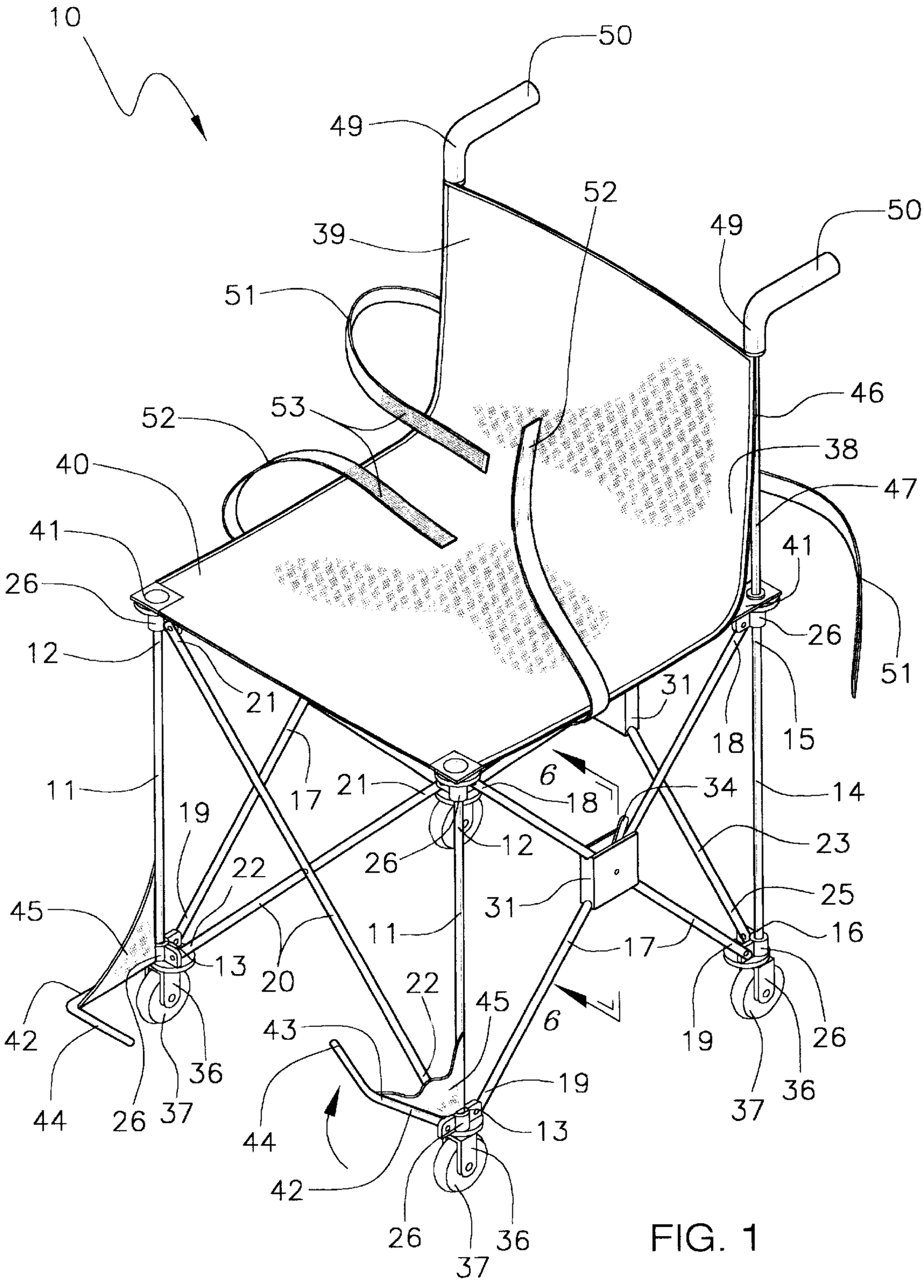

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FIG. 1

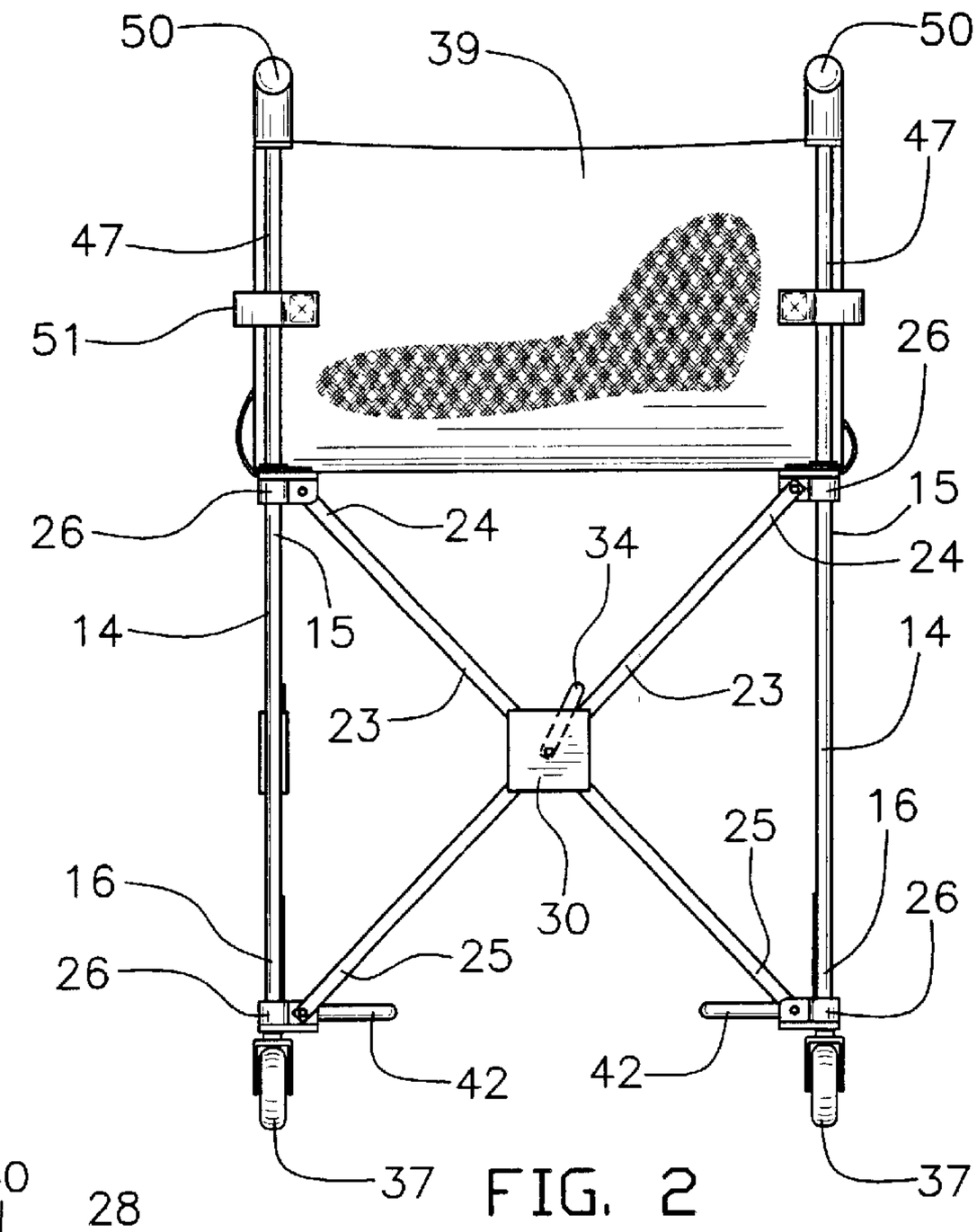
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FIG. 2

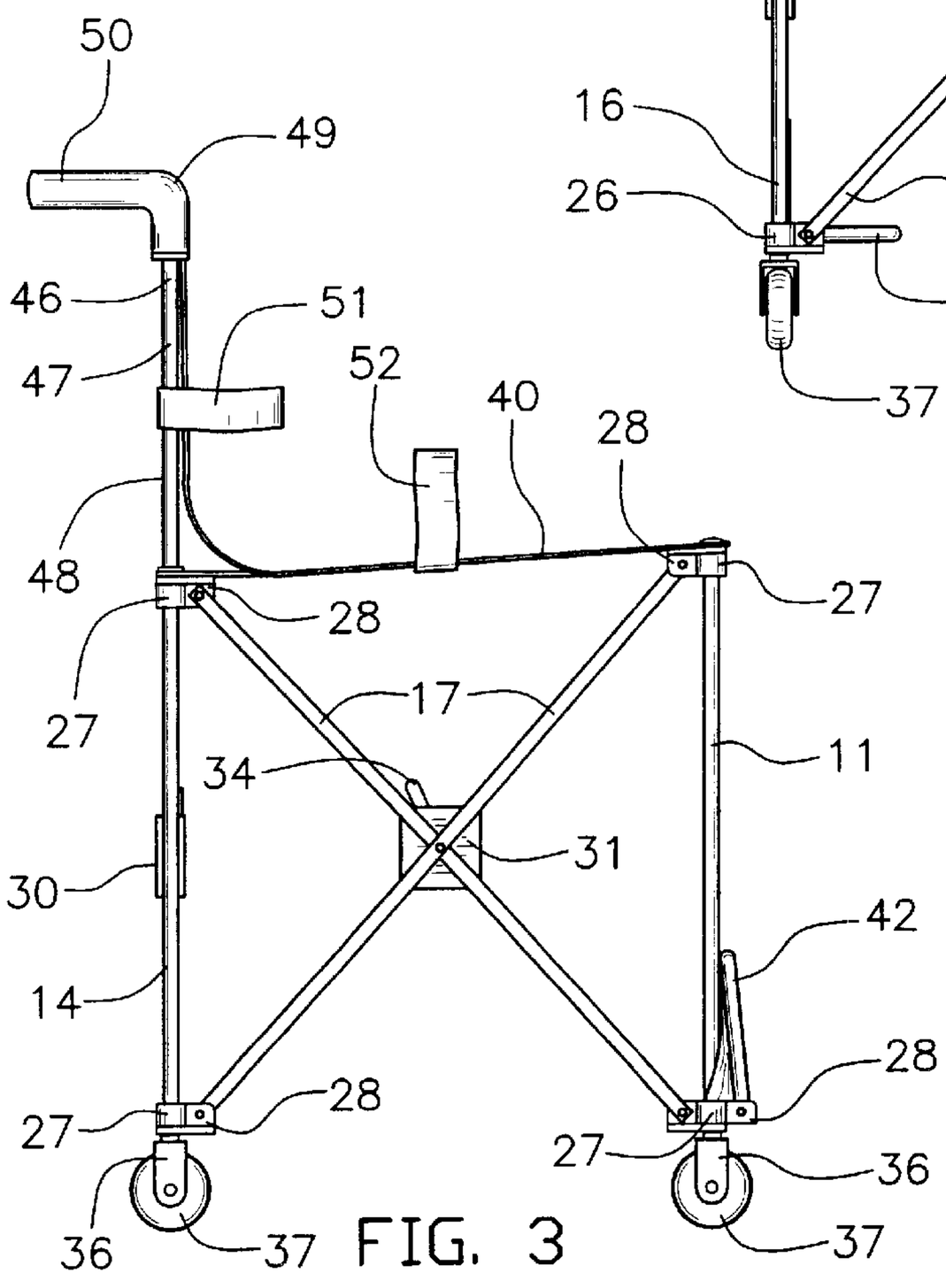
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FIG. 3

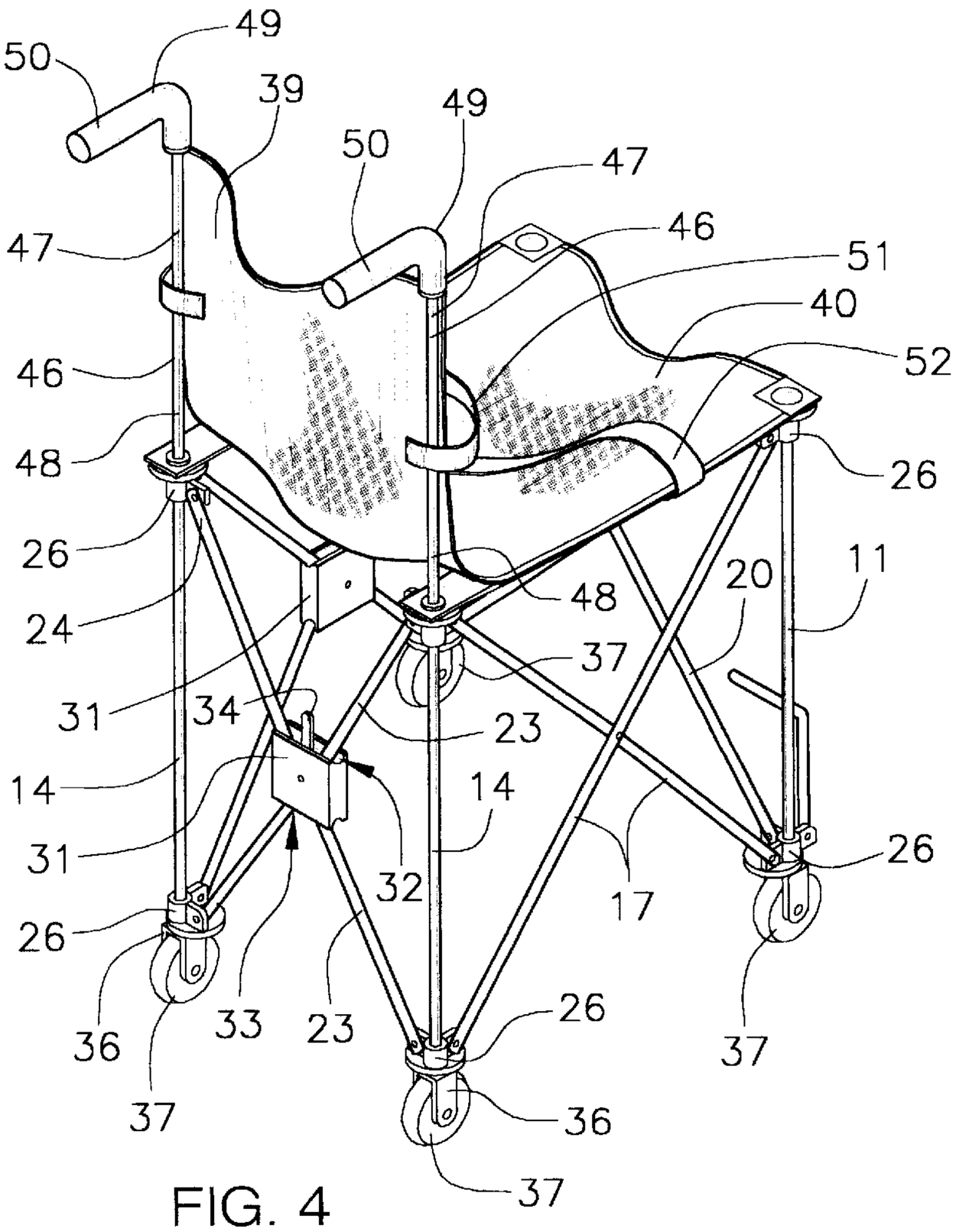
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FIG. 4

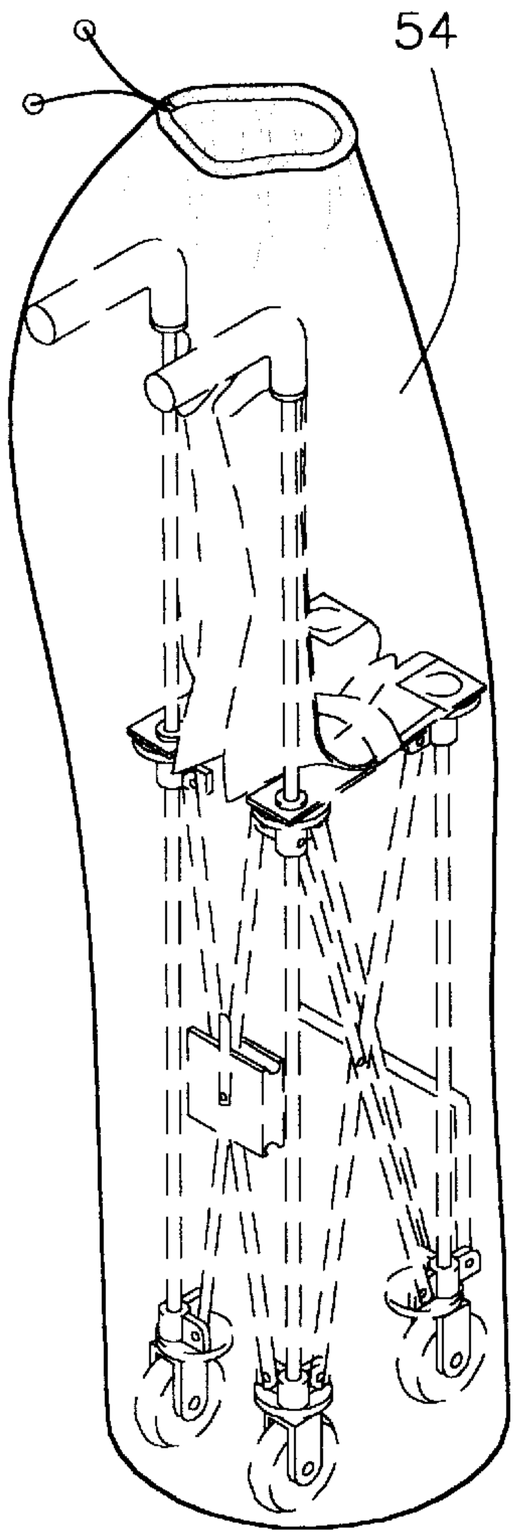
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FIG. 5

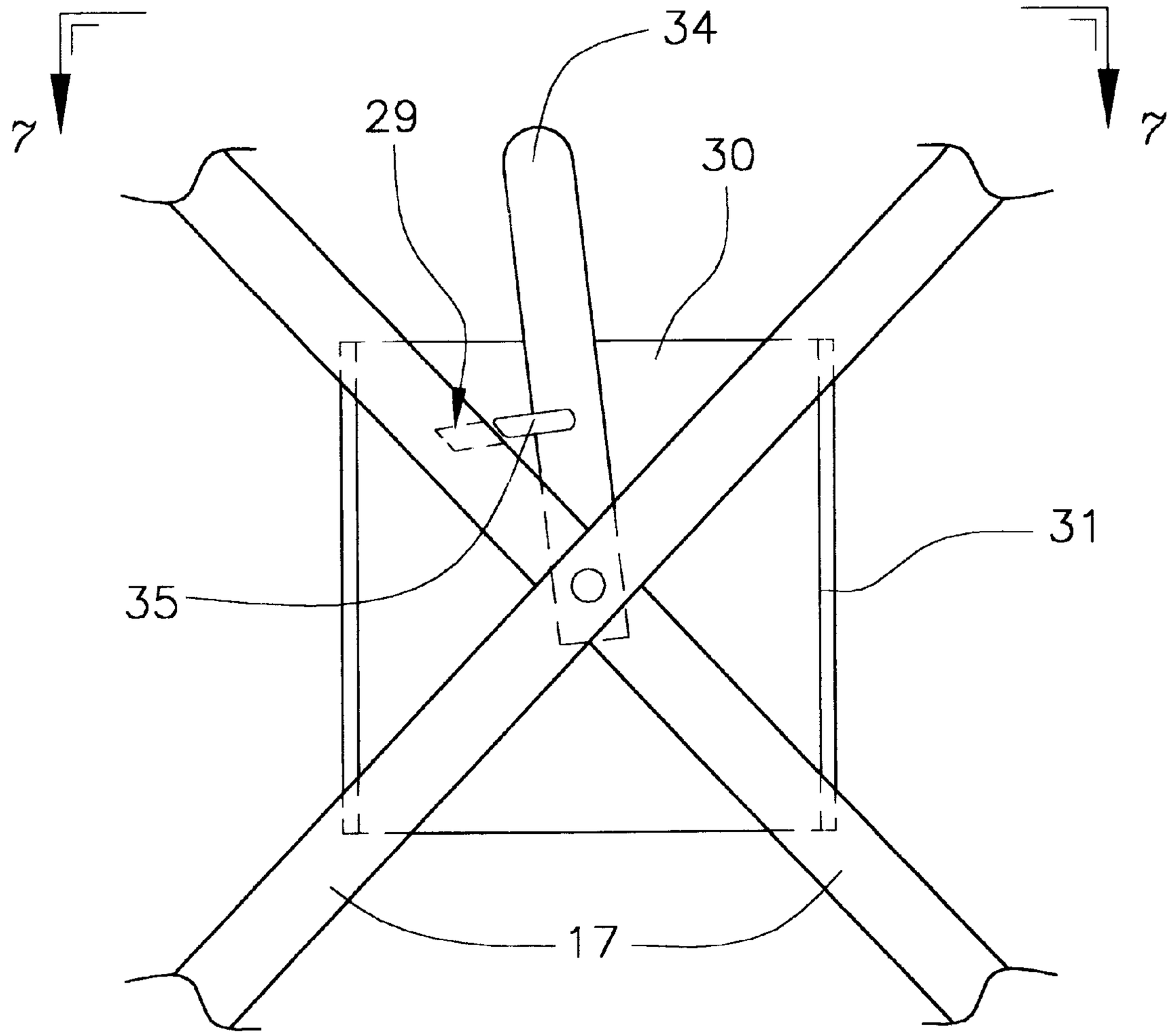

FIG. 6

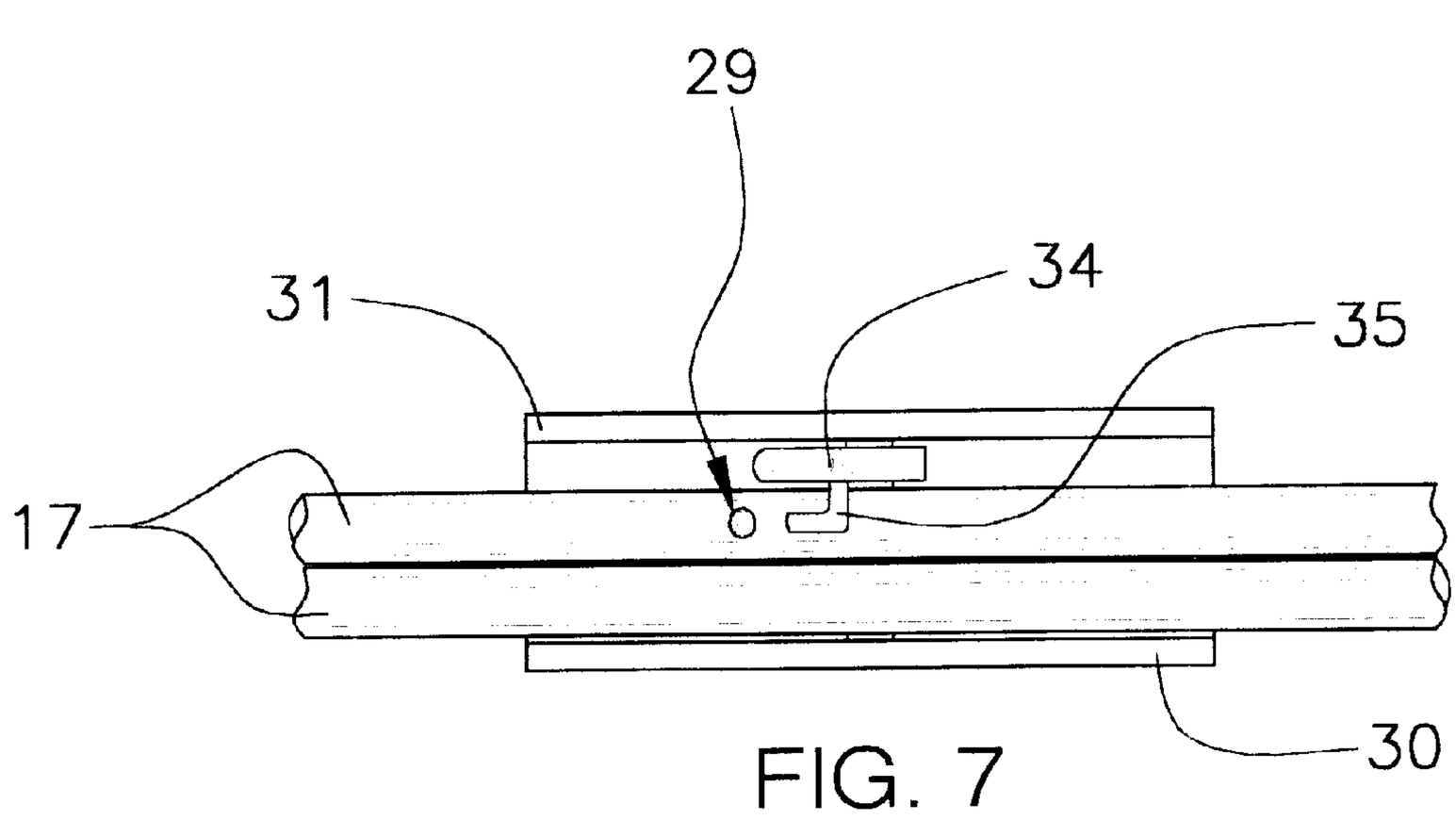

FIG. 7

COLLAPSIBLE WHEELCHAIR

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to foldable wheelchairs and more particularly pertains to a new collapsible wheelchair for allowing a user to easily tote one's wheelchair along on a public transportation such as an airplane and bus.

2. Description of the Prior Art

The use of foldable wheelchairs is known in the prior art. More specifically, foldable wheelchairs heretofore devised and utilized are known to consist basically of familiar, expected and obvious structural configurations, notwithstanding the myriad of designs encompassed by the crowded prior art which have been developed for the fulfillment of countless objectives and requirements.

Known prior art includes U.S. Pat. No. 5,857,688; U.S. Pat. No. 5,669,619; U.S. Pat. No. 5,261,684; U.S. Pat. No. 5,568,933; U.S. Pat. No. Des. 360,172; and U.S. Pat. No. Des. 286,997.

While these devices fulfill their respective, particular objectives and requirements, the aforementioned patents do not disclose a new collapsible wheelchair. The prior art describes inventions having frames, wheels mounted to the frames, seat members mounted upon the frames, and handles for moving the wheelchairs.

SUMMARY OF THE INVENTION

The general purpose of the present invention, which will be described subsequently in greater detail, is to provide a new collapsible wheelchair which has many of the advantages of the foldable wheelchairs mentioned heretofore and many novel features that result in a new collapsible wheelchair which is not anticipated, rendered obvious, suggested, or even implied by any of the prior art foldable wheelchairs, either alone or in any combination thereof. The present invention includes a collapsible seat support assembly; and further includes wheel assemblies upon which the collapsible seat support assembly is mounted and including brackets being mounted to the collapsible seat support assembly and wheels being; rotatably mounted to the brackets; and also includes seat member being supported by the collapsible seat support assembly; and further includes footrest assemblies being attached to the collapsible seat support assembly; and also includes handle members being mounted to the collapsible seat support assembly; and further includes strap members being attached to the seat member for securing a person upon the seat member; and also includes a storage bag for storing the collapsible wheelchair. None of the prior art describes the brace locking assemblies of the present invention.

There has thus been outlined, rather broadly, the more important features of the collapsible wheelchair in order that the detailed description thereof that follows may be better understood, and in order that the present contribution to the art may be better appreciated. There are additional features of the invention that will be described hereinafter and which will form the subject matter of the claims appended hereto.

In this respect, before explaining at least one embodiment of the invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and to the arrangements of the components set forth in the following description or illustrated in the drawings. The invention is capable of other embodiments and of

being practiced and carried out in various ways. Also, it is to be understood that the phraseology and terminology employed herein are for the purpose of description and should not be regarded as limiting.

It is an object of the present invention to provide a new collapsible wheelchair which has many of the advantages of the foldable wheelchairs mentioned heretofore and many novel features that result in a new collapsible wheelchair which is not anticipated, rendered obvious, suggested, or even implied by any of the prior art foldable wheelchairs, either alone or in any combination thereof.

Still another object of the present invention is to provide a new collapsible wheelchair for allowing a user to easily tote one's wheelchair along on a public transportation such as an airplane and bus.

Still yet another object of the present invention is to provide a new collapsible wheelchair that can be easily and conveniently set up and taken down in a matter of minutes.

These together with other objects of the invention, along with the various features of novelty which characterize the invention, are pointed out with particularity in the claims annexed to and forming a part of this disclosure. For a better understanding of the invention, its operating advantages and the specific objects attained by its uses, reference should be made to the accompanying drawings and descriptive matter in which there are illustrated preferred embodiments of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be better understood and objects other than those set forth above will become apparent when consideration is given to the following detailed description thereof. Such description makes reference to the annexed drawings wherein:

FIG. **1** is a front perspective view of a new collapsible wheelchair according to the present invention.

FIG. **2** is a rear elevational view of the present invention.

FIG. **3** is a side elevational view of the present invention.

FIG. **4** is a rear perspective view of the present invention.

FIG. **5** is a perspective view of a storage bag of the present invention.

FIG. **6** is a detailed cross-sectional view of one of leg fastening assemblies of the present invention.

FIG. **7** is a top plan view of one of the leg fastening assemblies of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference now to the drawings, and in particular to FIGS. **1** through **7** thereof, a new collapsible wheelchair embodying the principles and concepts of the present invention and generally designated by the reference numeral **10** will be described.

As best illustrated in FIGS. **1** through **7**, the collapsible wheelchair **10** generally comprises a collapsible seat support assembly. The collapsible seat support assembly includes leg members **11,14** having top ends **12,15** and bottom ends **13,16**, and also includes seat support members **41** being conventionally mounted at the top ends **12,15** of the leg members **11,14**, and further includes a plurality of elongate brace members **17,20,23** conventionally interconnecting the leg members **11,14**, and also includes brace locking assemblies **30** being conventionally mounted to a plurality of the elongate brace members **17,23**, and further includes bracket

members **26** for fastening the elongate brace members **17,20,23** to the leg members **11,14**. The leg members **11,14** include a pair of front leg members **11** and a pair of rear leg members **14**. The bracket members **26** are securely and conventionally mounted at the top ends **12,15** and the bottom ends **13,16** of the leg members **11,14**. Each of the bracket members **26** includes a sleeve **27** being conventionally mounted about a respective top and bottom end of a respective leg member **11,14**, and also includes grommets **28** being conventionally attached and welded to and extending outwardly of the sleeve **27**. The elongate brace members **17,20,23** include front **20**, side **17**, and rear pairs **20** of the elongate brace members; wherein the elongate brace members **17,20,23** of a respective pair of the elongate brace members **17,20,23** being pivotally and centrally attached with fasteners to one another. The front pair of the elongate brace members **20** has top ends **21** which are fastened to the grommets **28** at the top ends **12** of the front leg members **11**, and also has bottom ends **22** which are fastened to the grommets **28** at the bottom ends **13** of the front leg members **11**. Each of the side pairs of the elongate brace members **17** includes one of the elongate brace members having a top end **18** which is fastened to the grommet **28** at the top end **12** of a respective front leg member **11** and also having a bottom end **19** which is fastened to the grommet **28** at the bottom end **16** of a respective rear leg member **14**, and also includes another of the elongate brace members **17** having a top end **18** which is fastened to the grommet **28** at the top end **15** of a respective rear leg member **14** and also having a bottom end **19** which is fastened to the grommet **28** at the bottom end **13** of a respective top leg member **11**. One of the elongate brace members **17** of one of the side pairs of the elongate brace members has a slot **29** being disposed therein near a center thereof. The rear pair of the elongate brace members **23** has top ends **24** which are fastened to the grommets **28** at the top ends **15** of the rear leg members **14**, and also has bottom ends **25** which are fastened to the grommets **28** at the bottom ends **16** of the rear leg members **14**. One of the elongate brace members **23** of the rear pair of the elongate brace members has a slot **29** being disposed therein near a center thereof. The brace locking assemblies **30** are conventionally attached to one of the side pairs of the elongate brace members **17**, and are also conventionally attached to the rear pair of the elongate brace members **23**. Each of the brace locking assemblies **30** includes a housing **31** having open top and bottom ends **32,33** with the elongate brace members **17,23** extending through the open top and bottom ends **32,33** of the housing **31**, and also includes a lever **34** having an end being pivotally and conventionally mounted in the housing **31**, and further includes a latch pin **35** being conventionally attached to the lever **34** and extending outwardly therefrom and being removably received in the slot **29** of a respective elongate brace member **17,23** for keeping the elongate brace members **17,20,23** spread apart in a non-collapsible position.

Wheel assemblies upon which the collapsible seat support assembly is mounted includes brackets **36** being conventionally mounted to the collapsible seat support assembly and also includes wheels **37** being conventionally rotatably mounted to the brackets **36**. The brackets **36** of the wheel assemblies are conventionally mounted to the bottom ends **13,16** of the leg members **11,14**.

A seat member **38** being supported by the collapsible seat support assembly includes a sheet of material having a backrest portion **39** and a seat portion **40** being conventionally attached to the seat support members **41**. Footrest assemblies are conventionally attached to the collapsible seat support assembly. The footrest assemblies are pivotally attached at the bottom ends **13** of the front leg members **11**. Each of the footrest assemblies includes an elongate footrest member **42** having an end which is pivotally attached to a respective front leg member **11**, and also includes a piece of material **45** being conventionally attached to the elongate footrest member **42** and to a respective front leg member **11**. The elongate footrest member **42** includes a first portion **43** and a second portion **44** which is angled relative to the first portion **43**.

Handle members **46** are conventionally mounted to the collapsible seat support assembly. The handle members **46** include elongate shafts **47** having bottom portions **48** which are conventionally mounted upon the rear leg members **14** and extend upwardly therefrom, and also have top portions **49** which are angled relative to the bottom portions **48** thereof, and also include handgrip members **50** being conventionally mounted upon the top portions **49** of the elongate shafts **47**. The backrest portion of the seat member is conventionally attached to the bottom portions **48** Strap members **51,52** are conventionally attached to the seat member **38** for securing a person upon the seat member **38**. The strap members **51,52** include pairs of the strap members with one of the pairs of the strap members **51** being conventionally attached to the backrest portion **39** of the seat member **38** and with another of the pairs of the strap members **52** being conventionally attached to the seat portion **40** of the seat member **38**. The strap members **51,52** have strips of hook and loop fasteners **53** securely and conventionally attached at ends thereof for fastening the strap members **51,52** together. A storage bag **54** is provided for storing the collapsible wheelchair therein.

In use, the user pivots the levers **34** so that the latch pins **35** are inserted in the slots **29** of the respective elongate brace members **17,23** to set up the wheelchair **10** in a functional position. When the wheelchair **10** is not needed, the user simply pivots the levers **34** to remove the latch pins **35** from the slots **29** so that the elongate brace members **17,20,23** can be pivoted to collapse the wheelchair **10**.

As to a further discussion of the manner of usage and operation of the present invention, the same should be apparent from the above description. Accordingly, no further discussion relating to the manner of usage and operation will be provided.

With respect to the above description then, it is to be realized that the optimum dimensional relationships for the parts of the invention, to include variations in size, materials, shape, form, function and manner of operation, assembly and use, are deemed readily apparent and obvious to one skilled in the art, and all equivalent relationships to those illustrated in the drawings and described in the specification are intended to be encompassed by the present invention.

Therefore, the foregoing is considered as illustrative only of the principles of the collapsible wheelchair. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

We claim:

1. A collapsible wheelchair comprising:

a collapsible seat support assembly, said collapsible seat support assembly including leg members having top ends and bottom ends, and also including seat support members being mounted at said top ends of said leg

members, and further including a plurality of elongate brace members interconnecting said leg members, and also including brace fastening assemblies being mounted to a plurality of said elongate brace members, and further including bracket members for fastening said elongate brace members to said leg members, said leg members including a pair of front leg members and a pair of rear leg members, said bracket members being securely mounted at said top ends and said bottom ends of said leg members, each of said bracket members including a sleeve being mounted about a respective said end of a respective said leg member, and also including grommets being attached to and extending outwardly of said sleeve, said elongate brace members including front, side, and rear pairs of said elongate brace members; wherein said elongate brace members of a respective said pair of said elongate brace members being pivotally and centrally attached to one another;

wheel assemblies upon which said collapsible seat support assembly is mounted and including brackets being mounted to said collapsible seat support assembly and wheels being rotatably mounted to said brackets;

a seat member being supported by said collapsible seat support assembly;

footrest assemblies being attached to said collapsible seat support assembly;

handle members being mounted to said collapsible seat support assembly;

strap members being attached to said seat member for securing a person upon said seat member; and

a storage bag for storing said collapsible wheelchair.

2. A collapsible wheelchair as described in claim **1**, wherein said front pair of said elongate brace members has top ends which are fastened to said grommets at said top ends of said front leg members and also having bottom ends which are fastened to said grommets at said bottom ends of said front leg members.

3. A collapsible wheelchair as described in claim **1**, wherein each of said side pairs of said elongate brace members includes one of said elongate brace members having a top end which is fastened to said grommet at said top end of a respective said front leg member and also having a bottom end which is fastened to said grommet at said bottom end of a respective said rear leg member, and also includes another of said elongate brace members having a top end which is fastened to said grommet at said top end of a respective said rear leg member and also having a bottom end which is fastened to said grommet at said bottom end of a respective said top leg member, one of said elongate brace members of one of said side pairs of said elongate brace members having a slot being disposed therein near a center thereof.

4. A collapsible wheelchair as described in claim **1**, wherein said rear pair of said elongate brace members has top ends which are fastened to said grommets at said top ends of said rear leg members and also having bottom ends which are fastened to said grommets at said bottom ends of said rear leg members, one of said elongate brace members of said rear pair of said elongate brace members having a slot being disposed therein near a center thereof.

5. A collapsible wheelchair as described in claim **1**, wherein said brace fastening assemblies are attached to one of said side pairs of said elongate brace members, and are also attached to said rear pair of said elongate brace members.

6. A collapsible wheelchair as described in claim **5**, wherein each of said brace fastening assemblies includes a housing having open top and bottom ends with said elongate brace members extending through said open top and bottom ends of said housing, and also includes a lever having an end pivotally mounted in said housing, and further includes a latch pin being attached to said lever and extending outwardly therefrom and being removably received in said slot of a respective said elongate brace member for keeping said elongate brace members spread apart in a non-collapsible position.

* * * * *